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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,068	05/24/2001	Chih-Chong Wang	60594-300401	6861

7590 12/13/2004

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EXAMINER

PATEL, NIHIR B

ART UNIT PAPER NUMBER

3743

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/866,068	Applicant(s) WANG ET AL.	
	Examiner Nihir Patel	Art Unit 3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,8-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

**DETAILED ACTION*****Response to Arguments***

Applicant's arguments filed on October 8<sup>th</sup>, 2004 have been fully considered but they are not persuasive. In reference to claims 5, 8, 9, and 17 the applicant argues that Shimada never suggests or teaches to utilize the plate to surround the die and the thermal pad for making the thermal pad closely compact to the die. The examiner disagrees. Shimada does suggest to utilize the plate 12 to surround the die and the thermal pad for making the thermal pad closely compact to the die (see figure 3).

The applicant also argues that Shimada never suggest or teach that the right cooling fins of the heatsink are less than the left cooling fins of the heatsink. The examiner disagrees. As can be seen in figure 3, the right cooling fins of the heatsink are less (2 fins) than the left fins of the heat sink (3 fins).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 5, 8, 9, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimada et al. US Patent No. 5,838,064. Referring to claim 17, Shimada discloses a supporting member for cooling means and electronic package using the same that comprises a heat-sink 43; a thermal pad 44, stuck to a bottom of the heat sink 43; and a stabilization plate 12, stuck to the bottom of the heat-sink wherein the stabilization plate is set around and apart from the thermal

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pad and the die of the chip for making the thermal pad closely contact the die of the ship (see figure 3).

Referring to claim 5, Shimada discloses a stabilization plate 12; and a heat-sink, stuck with the stabilization plate, wherein the heat-sink comprises a right portion and a left portion respectively having a first plurality of cooling fins and a second plurality of cooling fins, and the second cooling fins are less than the first cooling fins (see figure 3).

Referring to claim 8, Shimada discloses an apparatus that further comprises a thermal pad located under the heat-sink through which heat from a socket is conducted to the heat-sink (see figure 3).

Referring to claim 9, Shimada discloses an apparatus wherein the stabilization plate 12 surrounds the thermal pad 44 for making the thermal pad closely compact to the die when the heat-sink is located on the die (see figure 3).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al. US Patent No. 5,838,064 in view of Glenn et al. US Patent No. 5,596,485.

Referring to claims 1 and 10, Shimada discloses the applicant's invention as claimed with the exception of providing a stabilization plate that has a smaller thickness than the die. Glenn discloses a plastic packaged integrated circuit with heat spreader that does provide a stabilization

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plate that can be made of any dimensioned desired. Therefore it would have been obvious to modify Shimada's invention by providing a stabilization plate that has a smaller thickness than the die so that the heat-sink takes up less space.

Referring to claim 2, Shimada discloses the applicant's invention as claimed with the exception of providing a stabilization that is an n-shaped slice in a top view. Glenn discloses a plastic packaged integrated circuit with heat spreader that does provide a stabilization plate that can be made of any shape and size. Therefore it would have been obvious to modify Shimada's invention by providing a stabilization plate that can be any shape and size in order to meet the needs of the customers.

Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al. US Patent No. 5,838,064 in view of Feinberg et al. US Patent No. 5,060,114. Shimada discloses the applicant's invention as claimed with the exception of providing a stabilization plate that has a fingerprint thereon after being pressed by a finger, but the finger print disappears right away. Feinberg discloses a conformable pad with thermally conductive additive for heat dissipation that does provide a stabilization plate that has a fingerprint thereon after being pressed by finger, but the fingerprint disappears right away. Therefore it would have been obvious to modify Shimada's invention by providing a stabilization plate that has a fingerprint thereon after being pressed by a finger, but the fingerprint disappears right away in order to provide a closer contact between the heat-sink and the clip.

Referring to claims 12, 13, and 14, the applicant claims that the stabilization plate comprises of two bars respectively having length of about 49.29 to about 49.31 millimeters in a top view, a lateral bar having a length of about 48.9 millimeters to about 48.71 millimeters in top

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view, and the bars respectively having a width of about 9.99 to about 10.01 millimeter in a top. It is obvious to one in the ordinary skill of the art that the length and width of the bars is simply a matter of design choice since it really depends on where the invention is going to be applied.

Referring to claims 15 and 16 the applicant claims a stabilization plate that is made from soft and elastic material. After reviewing the applicant's specification, the examiner found that there was no criticality established on why the stabilization plate must be made from a soft and elastic material therefore the examiner came to a conclusion that the material used to make the stabilization is considered to be a matter of design choice.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

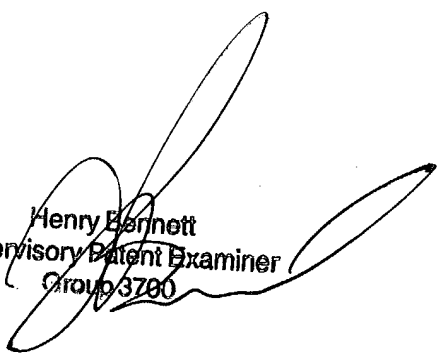
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communication from the examiner should be directed to Nihir Patel whose telephone number is (571) 272-4803. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful the examiner supervisor Henry Bennett can be reached at (571) 272 4791.

NP

November 30<sup>th</sup>, 2004



Henry Bennett  
Supervisory Patent Examiner  
Group 3700